

\* SWBAT define and apply acceleration

Sep 6-2:31 PM

# Welcome!!!

SECA Physics  
Wednesday 8 October 2014

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Centering...

\* Pick up:

- slip of paper (for later)
- half sheet of paper

Opening Question:

0 to 60 mph in 10 seconds **SPEED** MINIVAN  
0 to 60 mph in 5 seconds **VIPER**



What's the difference? What does this tell you about the two cars?

**ACCELERATE**

Sep 7-7:04 AM

## Catchy Physics Phrases:

Speed is

$$S = \frac{\Delta d}{\Delta t}$$

Velocity is

SPEED &amp; DIRECTION

New idea:

Acceleration is CHANGE IN VELOCITY OVER  
CHANGE IN TIME

$$a = \frac{\Delta v}{\Delta t}$$

New Villain in Town:

<http://www.tes.co.uk/teaching-resource/Velocity-a-new-Villain-in-town-6192925/>

Oct 10-7:34 AM

## Washer demo

- Make a prediction
- Write a brief explanation

SPREAD OUT WASHERS  
MADE AN EVEN SOUND ON PANLONGER OR FARTHER SOMETHING  
FALLS, THE MORE DISTANCE  
IT COVERS PER SECOND  
ACCELERATION IS CHANGING  
VELOCITY.

EVEN WASHERS  
PREDICTION:  
OBSERVATION:  
THE CLINKS  
GOT CLOSER  
TOGETHER

UNEVEN WASHERS  
PREDICTION:  
OBSERVATION:  
UNEVEN WASHERS  
⇒ EVEN SOUND

Bill Nye...

Oct 5-7:33 AM

### Catchy Physics Phrases: Speed, Velocity, Acceleration

Speed is

Change in distance over  
change in time

Velocity is

Speed with direction

Acceleration is

Change in **velocity** over  
change in time

$$a = \frac{\Delta v}{\Delta t}$$

Example:  $0 \rightarrow 60 \frac{\text{mi}}{\text{hr}}$  in 10 sec

$$a = \frac{\Delta v}{\Delta t} = \frac{60 \frac{\text{mi}}{\text{hr}}}{10 \text{ s.}} = 6 \text{ mi/hr/s.}$$

Controls in your car:

GAS PEDAL ← SPEED UP  
BRAKE PEDAL ← SLOW DOWN  
STEERING WHEEL ← CHANGE DIRECTION

Oct 4-7:27 AM

## Try the worksheet

Questions are in pairs -- comparing how **\$\$\$** changes to how **speed** changes

ON EARTH GRAVITY ADDS 10m/s every sec.  
 $10 \text{ m/s/s} = 10 \text{ m/s}^2$

Oct 5-8:37 AM

### Daily 3 Questions

- \* Every day except test/project days
- \* 3 Questions on the topics of the day
- \* Main source of daily points
- \* I am happy to give credit when I have no concerns about someone giving or getting help with the answers.

You can't get your points if you don't have your **NAME!!!**

Name	Period
1.	
2.	
3.	

Sep 9-7:32 AM

1. What is one control in your car that will affect the car's acceleration?

**GAS, BRAKE, STEERING**

2. Washers that get more spread out (2nd string) make sound that

- A. gets more spread out
- B. is evenly spaced**
- C. gets closer together

3. Acceleration is change in VELOCITY over change in

**TIME**.

Oct 8-6:48 AM